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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,870	06/08/2001	George M. Zimmer	260006.442	2647

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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC
701 FIFTH AVE
SUITE 6300
SEATTLE, WA 98104-7092

EXAMINER

PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/878,870

Applicant(s)

ZIMMER ET AL.

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-49, 54-56 and 59-68 is/are rejected.
- 7) ☒ Claim(s) 50-53, 57 and 58 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4. 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-13, 15-19, 21-26, 28-32, 34-38, 40-45, 47-49, 54-56, 59-61, 63-66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moraski et al (US 4,645,904) or Jurcik et al (US 6,076,359) in view of Tanaka et al (US 5,005,370).

Moraski et al or Jurcik et al discloses the vaporizer claimed including a heat exchanger with a gas inlet, a heater and a gas outlet. Moraski et al shows a solenoid that controls the flow of the gas into the heat exchanger. Jurcik et al shows a temperature sensor which enables the control means to control the operation of the heating exchanger as well as the pressure sensor of a gas source. However, Moraski et al and Jurcik et al do not teach the claimed structure of the capacity control to control the inlet flow of the gas into the heat exchanger.

Tanaka et al shows the claimed valve control having the valve body, a diaphragm, a temperature sensor, a valve inlet, a valve outlet, an auxiliary pressure device having a coil spring which biases the pressure of the valve control, and a valve positioned between a source reservoir and an evaporator to control the flow rate of the source material which depends on the temperature sensor such as a bulb connected with an expansion fluid to actuate the diaphragm which controls the valve to control the flow of the source material. Such movement of the

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diaphragm is the result of the pressure of the expansion fluid which was activated by the temperature sensor.

In view of Tanaka et al, it would have been obvious to one of ordinary skill in the art to adapt Moraski et al or Jurcik et al with the claimed valve control to alternatively control the flow of the source material into the heat exchanger so that the vaporization of the source material is kept at the predetermined rate with high efficiency.

With respect to claims 4, 12 and 25, it would have been obvious to one of ordinary skill in the art to use an expansion fluid having similar saturation properties of the liquefied gas or any other type of fluids since the choice of such fluids would have been dependent upon its expansion characteristics that meet the user's desired expansion of such fluid.

With respect to claim 35, while Moraski et al and Jurcik et al shows a single vaporizer, it would have obvious to one of ordinary skill in the art to use one or a plural vaporizers which depends on how much one wishes to produce such vaporization within the given time and applications. If one were to produce a large quantity of such vaporization within a given time, one would be motivated to prepare multiple vaporizers to meet such demand.

With respect to claims 55 and 56, Jurcik et al shows a heat exchanger in Figure 14A having a mass of thermally conductive material embedded therein with a gas piping and fittings. Jurcik et al further shows that strip heaters can be attached to the heating block (see column 11, line 51- column 12, line 13).

3. Claims 6, 14, 20, 27, 33, 39, 46, 62 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moraski et al or Jurcik et al in view of Tanaka et al as applied to claims 1-5, 7-

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13, 15-19, 21-26, 28-32, 34-38, 40-45, 47-49, 54-56, 59-61, 63-66 and 68 above, and further in view of Barbulesco (US 2,856,759) or Nielsen (US 4,032,070).

Moraski et al or Jurcik et al in view of Tanaka et al discloses the structure and method claimed except an adjustment member to adjustably select the biasing pressure.

Barbulesco or Nielsen shows an adjustment member that can adjustably select the biasing pressure. In view of Barbulesco or Nielsen, it would have been obvious to one of ordinary skill in the art to adapt Moraski et al or Jurcik et al, as modified by Tanaka et al, with an adjustment member to adjust the coil spring member to meet the desired flow rate of the vaporization of the gas fluid.

Allowable Subject Matter

4. Claims 50-53, 57 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Fortney (US 3,250,723), Hinkle et al (US 5,966,499), Swiatosz (US 5,870,524), Komino et al (US 6,157,774).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on 703-308-1327. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

S P L

Sang Y Paik
Primary Examiner
Art Unit 3742

syp
February 5, 2003